TMR-IF130/IF230R

SERVICE MANUAL

US Model
TMR-IF230R
Canadian Model
E Model
Australian Model
TMR-IF130/IF230R

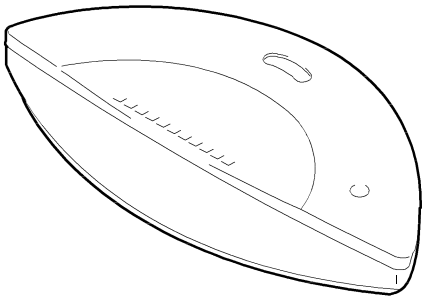

Illustration : TMR-IF230R

TMR-IF130 is the component model block one in MDR-IF130K.
TMR-IF230R is the component model block one in MDR-IF230RK.

COMPONENT MODEL NAME FOR MDR-IF130K/IF230RK

	MDR-IF130K	MDR-IF230RK
Cordless Stereo Headphones	MDR-IF230	MDR-IF230
Transmitter	TMR-IF130	TMR-IF230R

SPECIFICATIONS

General

Modulation system	Frequency modulation
Carrier frequency	Right 2.8MHz Left 2.3MHz
Frequency response	18 – 22,000Hz
Power source	DC IN 9V jack accepts power supplied from the AC power adaptor for use on the following voltages:

Operating voltage	
US, Canadian, Central & South America model	120V AC,60Hz
Australian model	240V AC,50Hz
E model	220 - 230V AC,50Hz

Audio input	Phono jacks/stereo mini jack
Dimensions	Approx. 152 x 40 x 72mm (6 x 1 1/2 x 2 3/4in.) (w/h/d)
Mass	Approx. 85g (3.0oz.)

Design and specifications are subject to change without notice.

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INFRARED TRANSMITTER

MICROFILM

SONY®

SECTION 1
ELECTRICAL ADJUSTMENT

NOTE :

1. The adjustments should be performed in the order given.
2. The adjustments and measurements should be perfomed for both L-ch and R-ch unless otherwise indicated.
3. L-ch adjustment should be completed before performing R-ch adjustment.

OSCILLATING FREQUENCY Adjustment

Procedure :

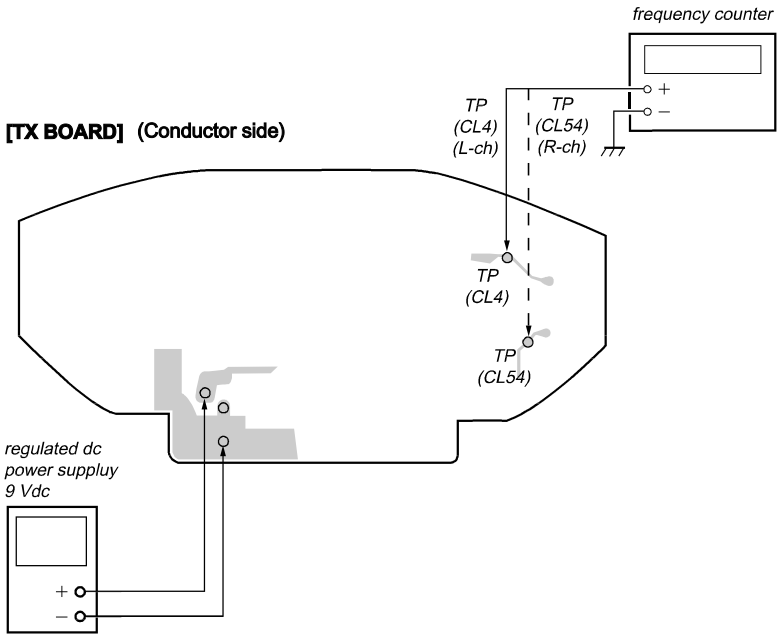
No signal state.

1. Connect the frequency counter to TP (CL4) (L-ch) and TP (CL-54) (R-ch).
2. Adjust with RV1 (L-ch) and RV2 (R-ch) so that the reading on the frequency counter becomes the specified value.

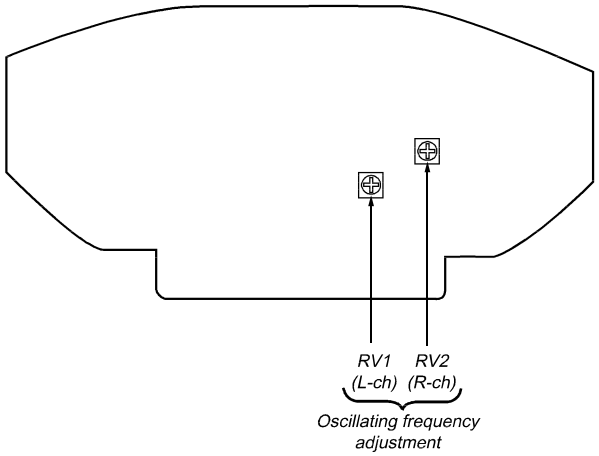
Specified Value:

L-ch	RV1	2.3MHz ±2kHz
R-ch	RV2	2.8MHz ±2kHz

Connection Points and Adjustments Location :



[TX BOARD] (Component side)



SECTION 2
DIAGRAMS

2-1. PRINTED WIRING BOARDS

- **SEMICONDUCTOR LOCATION**

Ref. No.	Location
D1	A-6
D2	A-5
D3	A-4
D4	A-3
D101	F-8
IC11	C-3
IC91	D-2
Q11	C-6
Q12	C-7
Q13	D-6
Q51	E-6
Q52	D-7
Q53	D-6
Q92	C-5
Q93	C-4

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Note:
- ⟜——: parts extracted from the component side.
- ▒▒▒: Pattern from the side which enables seeing.

2-2. SCHEMATIC DIAGRAM

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : adjustment for repair.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack (J4).
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO
  ⇨ : RF

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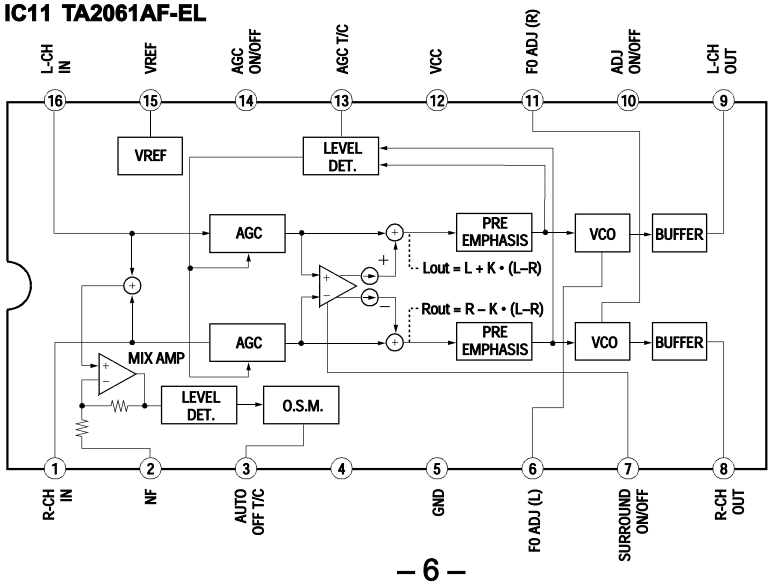
● **IC BLOCK DIAGRAM**

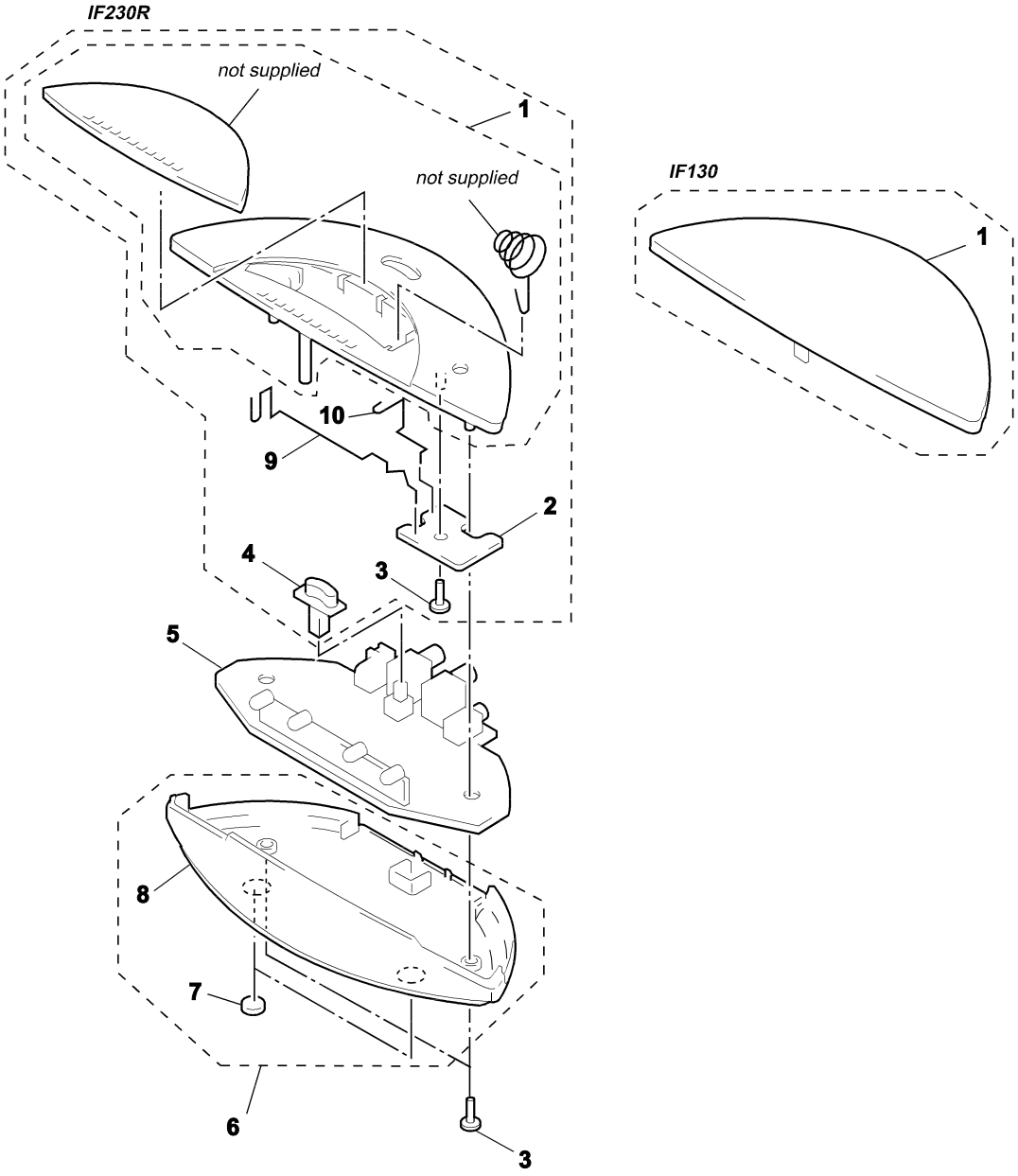
IC11 TA2061AF-EL



SECTION 3
EXPLODED VIEW

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark
1	4-995-960-01	CABINET (UPPER) (IF130)	
* 1	X-4947-816-1	CABINET (UPPER) ASSY (IF230R)	
* 2	1-669-729-11	CHARGE BOARD (IF230R)	
3	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
4	4-979-841-01	COVER (SWITCH) (IF230R)	
* 5	A-4542-502-A	TX BOARD, COMPLETE (IF130)	
* 5	A-4542-505-A	TX BOARD, COMPLETE (IF230R)	

Ref. No.	Part No.	Description	Remark
* 6	X-4948-069-1	CABINET (LOWER) ASSY (IF230R)	
* 6	X-4949-960-1	CABINET (LOWER) ASSY (IF130)	
7	4-984-729-01	FOOT, RUBBER	
8	4-979-840-11	CABINET (LOWER) (IF230R)	
8	4-995-961-01	CABINET (LOWER) (IF130)	
9	4-987-261-01	TERMINAL (+), BATTERY (IF230R)	
10	4-900-350-01	TERMINAL (CHARGE -) (IF230R)	

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CHARGE | LED | TX

SECTION 4
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-669-729-11	CHARGE BOARD (IF230R)			
		**********			
	4-900-350-01	TERMINAL (CHARGE -) (IF230R)			
	4-987-261-01	TERMINAL (+), BATTERY (IF230R)			
		< DIODE >			
D101	8-719-066-58	LED SM2512 (CHARGE) (IF230R)			
		< RESISTOR >			
R101	1-216-045-00	METAL CHIP	680	5%	1/10W (IF230R)
R102	1-216-023-00	METAL CHIP	82	5%	1/10W (IF230R)
R103	1-216-045-00	METAL CHIP	680	5%	1/10W (IF230R)
R104	1-216-047-91	RES,CHIP	820	5%	1/10W (IF230R)
**********					
*	1-669-728-11	LED BOARD			
		*********			
		< DIODE >			
D1	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D2	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D3	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D4	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
**********					
*	A-4542-502-A	TX BOARD, COMPLETE (IF130)			
*	A-4542-505-A	TX BOARD, COMPLETE (IF230R)			
		**********			
		< CAPACITOR >			
C1	1-126-963-11	ELECT	4.7uF	20%	50V
C2	1-126-786-11	ELECT	47uF	20%	16V
C3	1-126-157-11	ELECT	10uF	20%	16V
C6	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C7	1-126-963-11	ELECT	4.7uF	20%	50V
C8	1-126-934-11	ELECT	220uF	20%	16V
C11	1-124-464-11	ELECT	0.22uF	20%	50V
C12	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C13	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C14	1-163-245-11	CERAMIC CHIP	56PF	5%	50V

Ref. No.	Part No.	Description			Remark
C51	1-124-464-11	ELECT	0.22uF	20%	50V
C53	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C54	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C91	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C92	1-104-664-11	ELECT	47uF	20%	16V
C93	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C94	1-104-664-11	ELECT	47uF	20%	16V
C95	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C97	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN1	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P (IF230R)			
		< IC >			
IC11	8-759-497-48	IC TA2061AF-EL			
IC91	8-759-095-60	IC S-81250PG			
		< JACK >			
J1	1-764-270-11	JACK,STEREO MINIATURE(DIA.3.5)			(AUDIO IN B)
J2	1-784-910-21	JACK, PIN (AUDIO/IN A L-CH)			
J3	1-784-910-11	JACK, PIN (AUDIO/IN A R-CH)			
J4	1-778-380-11	JACK,DC(POLARITY UNIFIED TYPE)			(DC IN 9V)
		< TRANSISTOR >			
Q11	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q12	8-729-024-00	TRANSISTOR 2SC3377-QR			
Q13	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q51	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q52	8-729-024-00	TRANSISTOR 2SC3377-QR			
Q53	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q92	8-729-422-57	TRANSISTOR UN4111			
Q93	8-729-029-72	TRANSISTOR DTC114YS-TP			
		< RESISTOR >			
R1	1-216-130-00	RES,CHIP	3.3M	5%	1/10W
R2	1-216-041-00	METAL CHIP	470	5%	1/10W
R3	1-216-113-00	METAL CHIP	470K	5%	1/10W (IF230R)
R11	1-216-091-00	METAL CHIP	56K	5%	1/10W
R12	1-216-025-91	METAL CHIP	100	5%	1/10W

TX

Ref. No.	Part No.	Description			Remark
R13	1-216-043-91	METAL CHIP	560	5%	1/10W
R14	1-216-338-11	RES,CHIP	30K	1%	1/10W
R15	1-216-596-11	RES,CHIP	2.7K	1%	1/10W
R16	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R17	1-216-041-00	METAL CHIP	470	5%	1/10W
R18	1-216-003-11	RES,CHIP	12	5%	1/10W
R19	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R51	1-216-091-00	METAL CHIP	56K	5%	1/10W
R52	1-216-025-91	METAL CHIP	100	5%	1/10W
R53	1-216-043-91	METAL CHIP	560	5%	1/10W
R54	1-216-338-11	RES,CHIP	30K	1%	1/10W
R55	1-216-596-11	RES,CHIP	2.7K	1%	1/10W
R56	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R57	1-216-041-00	METAL CHIP	470	5%	1/10W
R58	1-216-003-11	RES,CHIP	12	5%	1/10W
R59	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R94	1-216-073-00	METAL CHIP	10K	5%	1/10W
R97	1-216-017-11	RES,CHIP	47	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-241-767-21	RES, ADJ, CARBON 100K (OSC FREQUENCY L-CH)			
RV2	1-241-767-21	RES, ADJ, CARBON 100K (OSC FREQUENCY R-CH)			
		< SWITCH >			
S1	1-554-419-00	SWITCH, PUSH (1 KEY) (POWER) (IF230R)			

TMR-IF130/IF230R

SERVICE MANUAL

AEP Model
UK Model

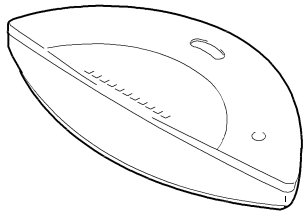

Illustration : TMR-IF230R

TMR-IF130 is the component model block one in MDR-IF130K.
TMR-IF230R is the component model block one in MDR-IF230RK.

COMPONENT MODEL NAME FOR MDR-IF130K/IF230RK

	MDR-IF130K	MDR-IF230RK
Cordless Stereo Headphones	MDR-IF230	MDR-IF230
Transmitter	TMR-IF130	TMR-IF230R

SPECIFICATIONS

General

Modulation system	Frequency modulation
Carrier frequency	Right 2.8MHz Left 2.3MHz
Frequency response	18 – 22,000Hz
Power source	DC IN 9V jack accepts power supplied from the AC power adaptor for use on the following voltages:
	Operating voltage
UK model	230 - 240V AC,50Hz
AEP model	220 - 230V AC,50Hz
Audio input	Phono jacks/stereo mini jack
Dimensions	Approx. 152 x 40 x 72mm (6 x 1 1/2 x 2 3/4in.) (w/h/d)
Mass	Approx. 85g (3.0oz.)

Design and specifications are subject to change without notice.

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INFRARED TRANSMITTER

SONY

MICROFILM

SECTION 1
ELECTRICAL ADJUSTMENT

NOTE :
1. The adjustments should be performed in the order given.
2. The adjustments and measurements should be performed for both L-ch and R-ch unless otherwise indicated.
3. L-ch adjustment should be completed before performing R-ch adjustment.

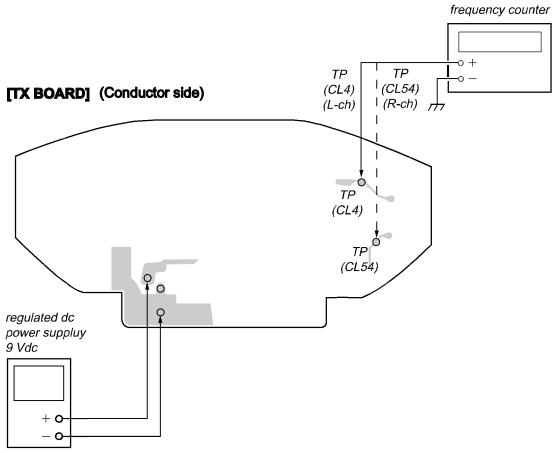
OSCILLATING FREQUENCY Adjustment

Procedure :
No signal state.
1. Connect the frequency counter to TP (CL4) (L-ch) and TP (CL-54) (R-ch).
2. Adjust with RV1 (L-ch) and RV2 (R-ch) so that the reading on the frequency counter becomes the specified value.

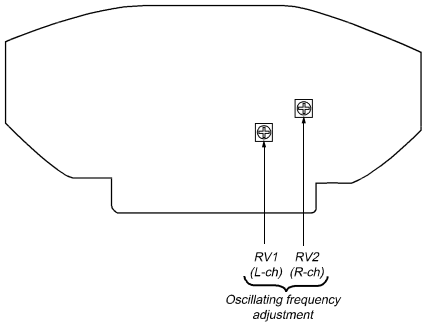
Specified Value:

L-ch	RV1	2.3MHz ±2kHz
R-ch	RV2	2.8MHz ±2kHz

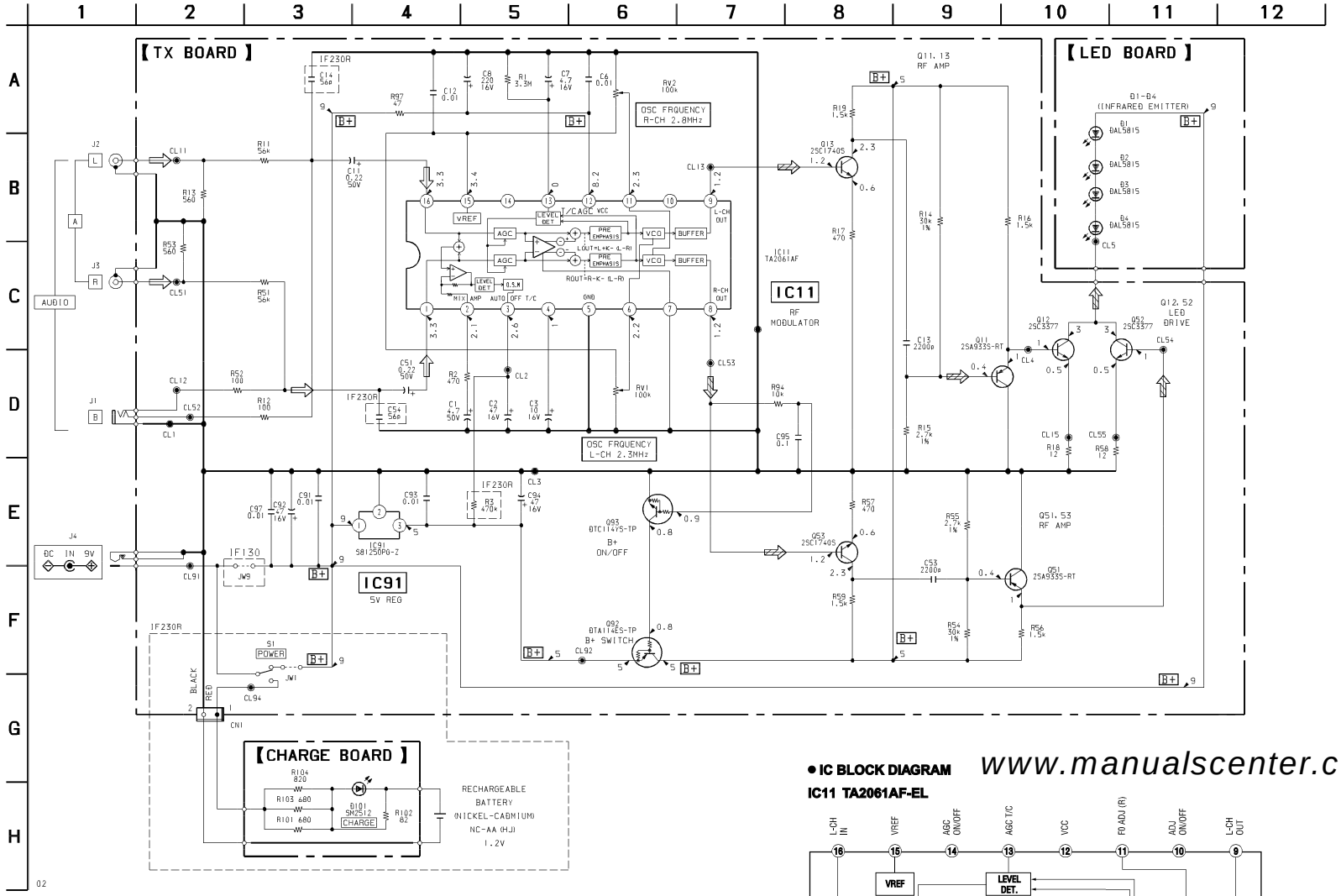
Connection Points and Adjustments Location :



[TX BOARD] (Component side)



2-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : adjustment for repair.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack (J4).
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

- Signal path.
  ⇨ : AUDIO
  ⇛ : RF

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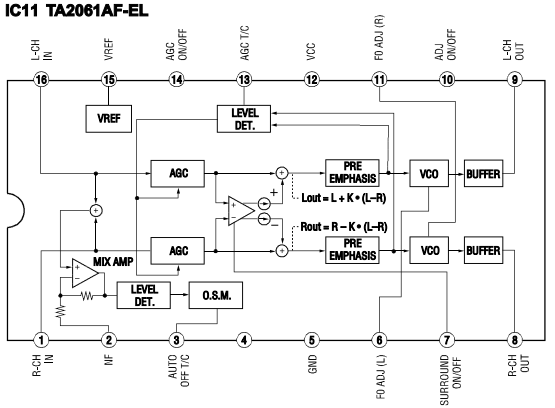
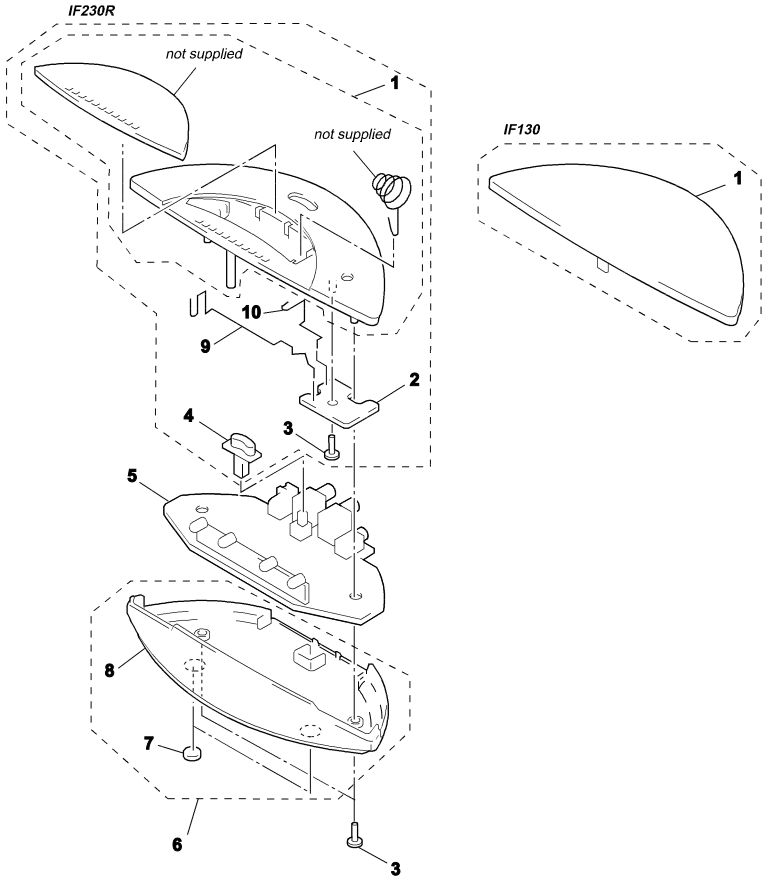
● **IC BLOCK DIAGRAM**

IC11 TA2061AF-EL



SECTION 3
EXPLODED VIEW

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



Ref. No.	Part No.	Description	Remark
1	4-995-960-01	CABINET (UPPER) (IF130)	
* 1	X-4947-816-1	CABINET (UPPER) ASSY (IF230R)	
* 2	1-669-729-11	CHARGE BOARD (IF230R)	
3	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
4	4-979-841-01	COVER (SWITCH) (IF230R)	
* 5	A-4542-502-A	TX BOARD, COMPLETE (IF130)	
* 5	A-4542-505-A	TX BOARD, COMPLETE (IF230R)	
* 6	X-4948-069-1	CABINET (LOWER) ASSY (IF230R)	
* 6	X-4949-960-1	CABINET (LOWER) ASSY (IF130)	
7	4-984-729-01	FOOT, RUBBER	
8	4-979-840-11	CABINET (LOWER) (IF230R)	
8	4-995-961-01	CABINET (LOWER) (IF130)	
9	4-987-261-01	TERMINAL (+), BATTERY (IF230R)	
10	4-900-350-01	TERMINAL (CHARGE -) (IF230R)	

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CHARGE LED TX

SECTION 4
ELECTRICAL PARTS LIST

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-669-729-11	CHARGE BOARD (IF230R)			
		**********			
	4-900-350-01	TERMINAL (CHARGE -) (IF230R)			
	4-987-261-01	TERMINAL (+), BATTERY (IF230R)			
		< DIODE >			
D101	8-719-066-58	LED SM2512 (CHARGE) (IF230R)			
		< RESISTOR >			
R101	1-216-045-00	METAL CHIP	680	5%	1/10W (IF230R)
R102	1-216-023-00	METAL CHIP	82	5%	1/10W (IF230R)
R103	1-216-045-00	METAL CHIP	680	5%	1/10W (IF230R)
R104	1-216-047-91	RES,CHIP	820	5%	1/10W (IF230R)
**********					
*	1-669-728-11	LED BOARD			
		*********			
		< DIODE >			
D1	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D2	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D3	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
D4	8-719-992-13	LED LIR5BE (INFRARED EMITTER)			
**********					
*	A-4542-502-A	TX BOARD, COMPLETE (IF130)			
*	A-4542-505-A	TX BOARD, COMPLETE (IF230R)			
		**********			
		< CAPACITOR >			
C1	1-126-963-11	ELECT	4.7uF	20%	50V
C2	1-126-786-11	ELECT	47uF	20%	16V
C3	1-126-157-11	ELECT	10uF	20%	16V
C6	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C7	1-126-963-11	ELECT	4.7uF	20%	50V
C8	1-126-934-11	ELECT	220uF	20%	16V
C11	1-124-464-11	ELECT	0.22uF	20%	50V
C12	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C13	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C14	1-163-245-11	CERAMIC CHIP	56PF	5%	50V

Ref. No.	Part No.	Description			Remark
C51	1-124-464-11	ELECT	0.22uF	20%	50V
C53	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C54	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C91	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C92	1-104-664-11	ELECT	47uF	20%	16V
C93	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C94	1-104-664-11	ELECT	47uF	20%	16V
C95	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C97	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN1	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P (IF230R)			
		< IC >			
IC11	8-759-497-48	IC TA2061AF-EL			
IC91	8-759-095-60	IC S-81250PG			
		< JACK >			
J1	1-764-270-11	JACK,STEREO MINIATURE(DIA.3.5)			(AUDIO IN B)
J2	1-784-910-21	JACK, PIN (AUDIO/IN A L-CH)			
J3	1-784-910-11	JACK, PIN (AUDIO/IN A R-CH)			
J4	1-778-380-11	JACK,DC(POLARITY UNIFIED TYPE)			(DC IN 9V)
		< TRANSISTOR >			
Q11	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q12	8-729-024-00	TRANSISTOR 2SC3377-QR			
Q13	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q51	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q52	8-729-024-00	TRANSISTOR 2SC3377-QR			
Q53	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q92	8-729-422-57	TRANSISTOR UN4111			
Q93	8-729-029-72	TRANSISTOR DTC114YS-TP			
		< RESISTOR >			
R1	1-216-130-00	RES,CHIP	3.3M	5%	1/10W
R2	1-216-041-00	METAL CHIP	470	5%	1/10W
R3	1-216-113-00	METAL CHIP	470K	5%	1/10W (IF230R)
R11	1-216-091-00	METAL CHIP	56K	5%	1/10W
R12	1-216-025-91	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R13	1-216-043-91	METAL CHIP	6.8K	5%	1/10W
R14	1-216-338-11	RES,CHIP	30K	1%	1/10W
R15	1-216-596-11	RES,CHIP	2.7K	1%	1/10W
R16	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R17	1-216-041-00	METAL CHIP	470	5%	1/10W
R18	1-216-003-11	RES,CHIP	12	5%	1/10W
R19	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R51	1-216-091-00	METAL CHIP	56K	5%	1/10W
R52	1-216-025-91	METAL CHIP	100	5%	1/10W
R53	1-216-043-91	METAL CHIP	560	5%	1/10W
R54	1-216-338-11	RES,CHIP	30K	1%	1/10W
R55	1-216-596-11	RES,CHIP	2.7K	1%	1/10W
R56	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R57	1-216-041-00	METAL CHIP	470	5%	1/10W
R58	1-216-003-11	RES,CHIP	12	5%	1/10W
R59	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R94	1-216-073-00	METAL CHIP	10K	5%	1/10W
R97	1-216-017-11	RES,CHIP	47	5%	1/10W
		<VARIABLE RESIST OR>			
RV1	1-241-767-21	RES, ADJ, CARBON 100K (OSC FREQUENCY L-CH)			
RV2	1-241-767-21	RES, ADJ, CARBON 100K (OSC FREQUENCY R-CH)			
		<SWITCH>			
S1	1-554-419-00	SWITCH, PUSH (1 KEY) (POWER) (IF230R)			